EFFECT OF LICENSING REQUIREMENT ON THE FINANCIAL PERFORMANCE OF DEPOSIT TAKING SAVINGS AND CREDIT COOPERATIVES SOCIETIES IN KENYA: A CASE OF SELECTED SACCOS IN NAIROBI

BY

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DECLARATION

I declare that the work in this dissertation has not been previously published or submitted elsewhere for award of a degree. I also declare that this is my own original work and contains no material written or published by other people except where due reference is made and author duly acknowledged.

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Signature…….. Date……..

I do hereby confirm that i have examined the master's dissertation of

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ABSTRACT

SACCOs in Kenya are required to adhere to regulations set in SACCO's regulation authority (SASRA). The management has to present the capital adequacy return reports, liquidity statement report, Statement of financial position and Statement of deposit return as well as Return on investments report which compares land, building, and financial assets to the SACCO's total assets and its core capital. This study sought to fill the existing knowledge gap to determine the effect of SASRA regulation on Sacco's financial performance and to answer the questions what is the effect of SASRA regulations on SACCO's financial performance in Kenya. The objective of the study is to assess the effect of SASRA regulations on financial performance of SACCO societies in Kenya. The descriptive survey design was adopted in this study. The research targeted all the 41 SASRA licensed deposit-taking SACCOS in Nairobi. The study used secondary data that was obtained from the financial statements of the SACCOs. Computer software (STATA) aided the analysis process where a statistical hypothesis test (Hausman specification test) was used to evaluate which model between random effects or fixed model corresponds to the data. A regression model was developed based on the outcome of the Hausman test. The results were analysed in form of tables and figures. Finally, conclusion and recommendation was provided. Presentation was done by use of tables for easy understanding. The study used panel regression (random effect) to investigate the relationship. The study results indicated that capital adequacy, liquidity and asset quality were significant predictors of ROE for the deposit taking SACCOs. Based on the study findings discussed above three recommendations are provided based on the objectives of the study. First given that all the independent variables had a positive effect on return of assets and return on equity, the study therefore recommends that deposit taking SACCOS in Kenya need to focus on how their performance relates to returns to equity. This is due to the fact that capital adequacy was observed to have a significant effect on return on asset and return on equity. Secondly, deposit taking SACCOS should observe their liquidity levels to ensure that they are liquid enough to perform their activities. Poor liquidity levels in SACCOS point to high riskiness and the inability of the SACCO to perform their short term obligations competently. Further, though asset quality had a relatively low significance on return on asset as compared to return on equity, it is important for deposit taking SACCOS to observe efficiency and effectiveness in dealing with delinquencies since the greatest asset of a given SACCO is in terms of performing loans. A high non-performing loan affects the SACCOS operations and has a trickledown effect on the SACCOS financial performance. The study further recommends a research using different ratios.

Keywords: SACCOs, Licensing Requirements, Financial Performance, Panel Regression

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DEDICATION

This research study is dedicated to my wife Leah and my three children Esther, Bridget and Michael. My parents, Daniel and Esther and my brothers and sister for their moral support throughout the entire MBA programme especially during this research project.

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ACRONYMS AND ABBREVIATIONS

AQ	Asset Quality
ATM	Automated Teller Machine
CA	Capital Adequacy
CAMEL	Capital adequacy, Asset quality, Management and Liquidity
CBK	Central Bank of Kenya
CMA	Capital Market Authority
EBIT	Earnings before Interest and Tax
FOSA	Front Office Service Activities
ICA	International Cooperative Alliance
KUSCCO	Kenya Union of Savings and Credit Cooperatives
L	Liquidity
MFI	Micro Finance Institutions
NIM	Net Interest Margin
PEARL	Protection, Effective financial structure, Asset quality, Rates of return and costs, Liquidity and Signs of growth
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
SACCO	Savings and Credit Cooperative Societies
SASRA	Sacco and Societies Regulatory Authority
WOCCU	World Council of Credit Union

CHAPTER ONE

INTRODUCTION

1.1 Background

The International Cooperative Alliance (ICA 2004) defines a cooperative as an independent association of people who voluntarily pool their resources together to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. The goal of a cooperative is to embody the values of self-help which include honesty, openness, self-responsibility, social responsibility, democracy, equality, equity, solidarity, mutual caring, efficiency, effectiveness, transparency and accountability. ICA recognizes seven principles that guide the formation, organization and activities of cooperatives, namely: (a) Voluntary and open membership (b) Democratic member control (c) Member economic participation, (d) Autonomy and independence, (e) Education, training and information, (f) Cooperation among Cooperatives, (g) Concern for Community.

Generally, the notion behind formation of savings and credit cooperative societies (SACCOS) is to encourage savings and avail credit to the members. SACCOS are the important micro-financing institutions for mobilization of financial resources for various development activities. Co-operatives are generally organized into service and producer cooperatives. The producer co-operatives objectives are to encourage the use of modern technology and contribute to national development through production. The service co-operatives on the other hand are responsible for procurement, marketing and extension services, loan disbursement, sale of consumer goods and member's education. In developing countries, co-operatives have made significant development in agriculture, banking, credit, agro processing, storage, marketing,

dairy, fishing and housing. Service co-operatives are more popular to communities and are organized on a shareholder basis, formed by individual members of organizations voluntarily working in a specific geographic area or in the same sector. (Bwana & Mwakujonga.2013)

According to world council of credit unions (WOCCU) statistics, as at July 2015 there were 57,000 SACCOs in the world, with a membership of two hundred seventeen million people in 105 countries of the world. The total savings were over USD 1.293 trillion, loans were over USD 1.083 trillion, reserves were close to USD 162 billion while total assets were close to 1.694 trillion. In Africa, in the same period there were 20,831 SACCOS, with over 16 million membership, savings and share deposit were over USD 4.8 billion, and loans to members were over USD 4.9 billion, reserves were over USD 481 million with total assets being over USD 5.6 billion. In Kenya in the same period, there were 5,000 SACCOs, with over 4.7 million memberships, savings and share deposit were close to USD 3 billion, and loans to members totalling to USD 4 billion, reserves were over USD 274 million with total assets nearing USD 4.2 billion. Of the total savings mobilized by Sacco's in Africa and loans advanced, Kenya contributed up to 62% of the savings and 65% of the Sacco loans.

These figures attest to the importance of SACCOs in the livelihoods of a considerable proportion of the world population. Ademba (2013) argues that despite low an asset of Sacco's compared to commercial banks, they attend to large number of members and therefore due to this large coverage and focus on small income class they should be regulated.

1.1.1 SACCOs in Nairobi Kenya

According to the Sacco society act, the Sacco's duly licensed to carry out deposit taking business in Nairobi as at 30th June 2015 are 41. In terms of total asset, 21 Sacco's are classified as large

Sacco's, 17 median and 3 small Sacco's. (SASRA,2015). Majority of these Sacco's offer various services to their members including normal loans, development loans, emergency loans and school fees. Majority of them are deposit taking and operate front office services Activities (FOSA). In addition to the above, FOSA's offer the following products to their members: processing of salaries, salary advances, over drafts, safe keeping of documents, and automated teller machine services (ATMs).

There has been fast growth of Sacco's in Nairobi a phenomenon that has been observed in the last two decades as a result of provision of credit to a wide range of individuals for different purposes and on a relatively affordable terms and conditions (Bwana & Mwakujonga.2013).These recent developments in SACCOS were originally not well covered by existing regulatory frame work namely the cooperative Act of 1997 and Cooperative Societies act of (2004). To ensure efficiency and effectiveness in management of Sacco's, there was a need for further legislation. This was not only to build a strong relationship between the management and SACCO members but to also build public confidence in the affairs of cooperatives. Today co-operatives particularly SACCOS are integral part of the government economic strategy focusing on creating income generating opportunities (Ademba, 2013).

1.1.2 SACCO Societies Regulatory Authority

The Sacco Societies Regulatory Authority (SASRA) is a statutory state corporation established under the Sacco Societies Act (Cap 490B) of the Laws of Kenya which came into full operation upon the gazettement of the Sacco Societies (Deposit-taking Sacco Business) Regulations, 2010 on 18th June 2010.The principal mandate of the Authority to is license Sacco Societies to

undertake deposit-taking Sacco business in Kenya commonly known as Front Office Service Activity (FOSA), to supervise and regulate such Sacco Societies in Kenya.

The government of Kenya established SASRA with an objective of protecting the interests of Sacco members, build public confidence towards the Sacco sector and to stimulate Kenya's economic growth through mobilization of domestic savings. SASRA is charged with the role of regulating, licensing and supervising deposit taking Sacco Societies in Kenya. (SASRA, 2015).The Government believes that SASRA, through effective implementation of the operational regulations and prudential standards will enhance efficiency in the SACCO subsector (Minishi, 2012).

The regulatory structure in Kenya is divided into four key agencies and regimes for prudential regulation: Central Bank of Kenya (CBK) for banks and payments settlement; Insurance Regulatory Authority (IRA) for insurance; the Capital Markets Authority (CMA) for capital markets and the Retirement Benefits Authority (RBA) for pensions. The chief regulator is however considered to be the Ministry of Finance (Mutuku, 2009). However SACCOS are regulated by SASRA which is under the ministry of Industrialization.

The government continues to play a significant role in the affairs of the co-operative movement. Given the importance and contribution of co-operatives to the national development as outlined above, the focus of Government relations with the movement must be through creation of more favourable policy and legal environment, especially by reviewing existing policy and legal frameworks so that co-operatives can function as independent, autonomous and self-propelled private sector organizations.

1.1.3 Financial performance

Performance is a set of financial and non-financial indicators which offer information on the degree of achievement of objectives and results (Leban&Euske, 2006). Organizational performance is a multi-dimensional construct and each industry can have its own benchmarks of performance measurement (Pathak, 2012).It is also the analysis of a company's performance as compared to goals and objectives. The analysis may take the form of financial performance, market performance and shareholders' value performance (Neely et al., 2002).Frequently used measures of organizational performance include organizational productivity, organizational effectiveness and industry ranking. Organizational productivity is a measures of how well the employees do their work while organizational effectiveness is a measure of how appropriate organizational goals are achieved and how well an organization is achieving those goals. Industry ranking are determined based on specific performance measures such as financial results (Robbins &Coutler, 2007).

According to Macpherson and Pabari (2004), most organizations view their performance in terms of effectiveness in achieving their mission, purpose or goals. Efficiency in deploying resources relates to the optimal use of resources to obtain the results desired. Finally, in order for an organization to remain viable over time, it must be both financially viable and relevant to its stakeholders and their changing needs. These four aspects of performance are the key dimensions to organizational performance. They are however affected by the external and internal factors. The organizations exist within certain external contexts or environments that facilitate or impede its performance. Key factors in the policy or regulatory environment, and in the economic, political, socio-cultural, environmental and technological contexts, affect how the

organization does its work, or the work it does. Gavrea et al. (2011), argue that internally organization performance is affected by leadership quality, information technology, strategy, innovation and development, employees and corporate governance. However, real issues exist in organizational performance because there is no consensus about definition, approach and dimensions of organizational performance and how it should be measured (Neely et al., 2002).

Financial performance measures the results of a firm's policies and operations in monetary terms. These results are reflected in the firm's return on investment, return on assets, value added among others (Kioko, 2010). Traditionally, analysis of financial statements using ratio analysis is the most common method employed in measuring financial performance of business entities. For instance, Pandey (2000) notes that return on equity (ROE) ratio is one of the most important relationship in financial analysis. Ogindo (2006) observes that profitability indicators such as return on equity (ROE) and return on assets (ROA) tend to summarize performance in all areas of the company. If portfolio quality is poor or efficiency is low, this will tend to be reflected in these ratios. Athanasoglou et al (2005) uses both ROE and ROA to measure profitability. They observe that ROA reflects the ability of a bank's management to generate profits from bank's assets while ROE indicates the return to shareholders on their equity and equals ROA times the total asset-to-equity ratio. The latter is often referred to as the bank's equity multiplier, which measures leverage. Naceur (2003) uses ROA and the net interest margin (NIM) as the measures of financial performance. Demirguc-Kunt et al. (1998) use net interest margin (NIM) and the ratio of before tax profit to total asset as their measure of bank efficiency.

1.2 Statement of the Problem

Lack of financial regulations has been the biggest impediment in operations of cooperatives in Kenya. This has significantly contributed to unstandardized policies, procedures and management information systems. SACCOs in Kenya are required by law to have financial statement audited at the end of fiscal year. The financial position of most Sacco is not accurately reported since many statements are not compliant with accepted accounting practices. There is no annual or frequent examination by the regulatory body (WOCCU 2009).

Prior to the SACCO Society's Act 2008, SACCOs were heavily in debt such that they were not able to promptly and adequately disburse enough loans and pay dividend to their members. Members who had withdrawn from these SACCOs could not get their share refund contrary to the requirement that any refund had to be done within 2 months. This not only put financial pressure on the members but also raised serious questions on the financial performance of the sector (Otieno, et al., 2013). The adverse situation was attributed to the weak regulatory framework for the rapidly growing sector. With the enactment of the SACCO Societies Act 2008 Section 68, the performance of the SACCO was expected to improve (Gakunu, 2010).

Despite the fact that SASRA regulations have been in operation for the last five years, the effect of compliance to the regulations on their financial performance has not been established. Since the enactment of these regulations there has been an increased empirical attention on the impact and effect of regulations on the financial performance of Sacco's in Kenya (Kioko, 2010). However these empirical studies have failed to specifically address the aspects of these regulations particularly on the effect of financial performance.

Studies on the relationship between various regulations and performance have produced mixed results. For instance, Ali and Deininger (2012) in their study on causes and implications of credit rationing in rural Ethiopia concluded that political and social networks determined credit accessibility and credit rationing affected productivity negatively. Jared and Akhtar (2012); Hadlock and James (2002) and Beruggested and Bonaccorsi (2006) found that financial leverage is positively related to performance. This is in contrast to what Demirguc and Maksimovic (2001) and Famaand French (2002) established that regulations and financial performance have a negative relationship. Studies conducted in Kenya to explore the effect of SASRA regulations on financial performance of credit co-operatives have not addressed the underneath effect of the regulations by SASRA. For instance, Ngaira (2011) concluded that SASRA has greatly impacted on the SACCO performance in terms of outreach, sustainability and performance, Makori, Munene and Muturi (2013) concluded that stakeholders needed to be involved in implementation of regulations, Wanjiku (2013) cited good governance, source of income and inadequate budgeting as factors hindering financial performance of SACCOS.

A study by Macharia (2013) examined the effect of licensing requirements on performance of cooperative societies in Kenya; Karanja (2012) analysed the relationship between size and cost efficiency of Sacco's with front office activities in Kenya;Mugweru (2011) who carried out research on effect of financing decisions on performance of non-financial companies listed in Nairobi Stock exchange and Ademba (2013) while analysing the challenges facing Sacco's regulations in Africa, did not comprehensively incorporate all the key financial attributes as spelt out in the SASRA regulations in a single study that can contribute to Sacco's financial performance. Moreover, the interaction effect of the various monetary resolutions has

not been considered by these studies. If the effect of compliance to SASRA regulations is not addressed stakeholders and public confidence is bound to be affected should any Sacco collapse due to poor financial performance. On the other hand, the government will not effectively monitor the operations of the Sacco's a sector earmarked for economic growth.

1.3 Objective of the Study

The main objective of the study was to assess the effect of the SASRA regulations on financial performance of SACCO societies in Kenya.

Specifically the study sought:

1. To assess the effect of capital adequacy regulation on financial performance of deposit taking SACCO's in Nairobi.
2. To assess the effect of effective liquidity management on financial performance of deposit taking SACCO's in Nairobi.
3. To determine the extent to which asset quality influence financial performance of deposit taking SACCO's in Nairobi.

1.4 Research Questions

The research sought to answer the following questions:

1. What is the effect of the capital adequacy on the financial performance in your SACCO?
2. How has the liquidity management regulation affected financial performance of your SACCO?
3. To what extent does SASRA regulation on asset quality affect financial performance of SACCO's in Kenya?

1.5 Significance of the Study

This study is likely to be of great beneficial to management of SACCOs in finding out whether their firm's financial performing has improved with regulations or not. The policy makers will obtain information on the SACCOs movement's dynamics. The study will further provide appropriate practices that may regulate the stakeholders in the cooperatives in Kenya. The deposit taking SACCOs will also obtain information that can help them improve their financial performance. The government through the line ministry can also use the findings of this study to emphasize the importance of the regulations. Also the findings are hoped to benefit the society from an economic point of view through economic development and financial empowerment.

1.6 Justification of the Study

SASRA regulations were sanctioned in 2008 as a result; there is limited research work on this area. While the performance of some SACCOs has improved, the performance of others has worsened for example, over 100,000 members of Harambee SACCO risked losing Kshs4 billion due to poor governance and financial mismanagement (Mugwe, 2011). Despite the four year window for the compliance with the SACCO society's authority, 28 SACCO's offering banking services risk being issued with sanctions by the regulator (Ademba, 2009).

1.7 Scope of the Study

The study sought to find out the effects of SASRA regulations on financial performance of selected SACCO's in Nairobi. The reason of limiting the study to Nairobi was because most of Sacco's have their headquarters in Nairobi and all information is found in the headquarters. The other reasons are time and resource constraints. The study was based on the financial performance for the last six financial years. The research looked at three financial ratios which are capital adequacy, liquidity and asset quality.

1.8 Limitations of the Study

The respondents approached to provide audited financial statements expressed unwillingness fearing that information being sought might be used to paint a negative image about their SACCOS. The study handled this challenge by issuing an introduction letter from the University and assured them that the information will be treated confidentially and is purely for academic purposes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter present a review of literature on the effect of regulation on organizations financial performance. It comprise of theoretical and empirical review and research gaps. The literature was obtained from books, journals, academic papers and internet sources.

2.2 Theoretical Framework

Theories form basis on which a study is undertaken. There exist few theories that attempt to explain the financial performance of financial institutions. This study attempts to explain the profitability theory, liquidity theory, capital adequacy quality theory and agency theory.

2.2.1 Theory of regulation

This theory was proposed by Arthur Cecil who advocated that regulation is supplied in response to the demand of the public for the correction of inefficient or inequitable market practices. This theory holds that regulations interventions occur in the interest of the general public at large. They are implemented in response to the demand of the public for the correction of inefficient or inequitable market practices. Through its implementation the government ensures there exists health competition, stable economy and introduces social objectives in economic policies (Martins, 2009). The theory further argues that regulations correct market failures that can be as a result monopoly, externalities and lack of information. The down fall of a financial institution such as bank or microfinance will have a bigger impact on the social cost than the private cost to the institution itself. Therefore, financial institutions left to control themselves will accept more risk than is optimal from a systemic point of view, hence the need for government regulation on banking activity and the establishment of capital requirements (Feldstein, 1996).

External regulations by the government or through an agency on private sector behavior can be justified on four broad grounds which relate to market failure: First, the moral hazard argument. If a market participant believes that the state will underwrite his losses, then behaviour will change. A good example is how deposit insurance encourages depositors and bankers to engage in risky behaviour that forces the state to pay in the end, thus undermining market discipline and entailing regulation. Second is the widows and orphans argument. These regulations provide protection to poorly (asymmetrically) informed clients, based on the view that small depositors and investors cannot assess properly the riskiness of financial institutions they deal with. Third is the public policy argument. In free market economies, public policy arguments call for competition and free trade. An example would be anti-trust laws in some countries to prevent monopolization of certain markets. Fourth, the systemic risk issue, which allows the state to prevent the failure of one participant to destabilize the whole system. This justifies the regulation, for example, of the payment system and the banking sector (Ngaira, 2011).

2.2.2 Capture theory

This theory argues that economic regulations are not about the public interest at all but is a process by which interest groups seek to promote their private interests. Regulation is supplied in response to the demands of interest groups struggling among themselves to maximize the incomes of their members (Posner, 1974). The Marxists in support of the theory argue that the capitalist control the financial institutions in our society and among the institution is the regulation and therefore capitalist must control regulations. The political scientists while supporting the capture theory argues that over time, regulatory agencies come to be dominated

by the industries regulated. The theory singles out a particular interest group the regulated firm as prevailing in the struggle to influence legislation, and it predicts a regular sequence, in which the original purposes of a regulatory program are later thwarted through the efforts of the interest group.

Firms will lobby legislators for regulations when such regulations provide: direct monetary subsidies, if the regulations will provide constraints on substitute product or service, subsidies or complementary products, when the regulations provide grounds for price fixing and the incumbent firms will have the ability to control entry by potential new rivals (Martins, 2009). The regulators or politicians therefore will always prefer to set low rates, other things being constant, to reap political support from the customers of regulated firms. On the other hand, allowing the regulated firm to earn high profits. This phenomenon creates two conflicting groups of consumers who want low priced products and regulated firms who want high profits. The politicians/regulators face a trade-off. If they allow higher profits, they gain political support from firms they regulate but lose support from consumers. The reverse is also true.

The above two theories, assume that regulations directly enforce a cost on the consumer or taxpayer, as a result, the general public interest is to do away with regulations and allow greater competition. This is the main driving force behind current market deregulation policies prevalent in markets. A good example of the deregulation drive to "make markets work better" is the report of the Australian Financial System Inquiry (Wallis Report), whose findings seek to create a flexible regulatory structure that is more receptive to the forces for change operating on the financial system; clarify regulatory goals; increase the accountability of the agencies charged with meeting those goals; ensure that the regulation of similar financial products are more

reliable and encourage competition by improving comparability; introduce greater competitive neutrality across the financial system; establish more contestable, efficient and fair financial markets resulting in reduced costs to consumers; provide more effective regulation for financial corporations which will also facilitate competition and efficiency; and facilitate the international competitiveness of the Australian financial system.

2.2.3 Economic theory of regulation

The theory was proposed by George Stigler who compared the regulations with the law and demand and supply. The theory is more precise and offers an opportunity to test with a body of data. Moreover, it is committed to the strong assumption of economic theory generally that people seek to advance their self-interest and do so rationally (Posner, 1974). This theory is based on two intuitions. First, the government can use its coercive power to give valuable benefits to a particular individual or groups. These economic regulations and the expression so created as a result of these powers can be viewed as a product whose allocation is dictated by the law of demand and supply. The second intuition is that the theory of cartels can help in locating the demand and supply curves. The theory of cartels depicts both the benefits and the cost side of the regulations. Where a cartels value is greater, it will result to a less elastic demand for the industry products or services and where the costs are high new entry into the market will be slower (Martins, 2009). These cartels bring forth the cost element in the regulations. First is the cost associated with the seller who must arrive at an agreed price to charge and the output of each seller. This eventually determines the profit levels of each member of the cartel. The second cost is created through the enforcement process of the cartel agreement against nonparticipants or defectors. However, cartels are always in the verge of collapsing since most of their members

are more than often tempted to sell their products or services at a slightly lower price than agreed (Posner, 1974). The theory can thus be relied upon to explain why there is high protective legislation in areas like agriculture, labor and professions, where private cartelization is hardly feasible (Postner, 1974).

2.2.4 Goodhart model

The model looks at systemic risk associated with financial institutions and suggests that the difference in focus and function of investor protection and systemic stability is large enough to justify two separate regulatory bodies in each country to share the regulatory responsibilities. The formulation of rules for the safety of the system should be the responsibility of the systemic stability arm. On the other hand, the monitoring and operation of the system should be divided between the two arms on the basis of their size. The model further points out the main reason for banking regulations as to prevent banking crises since the cost to the general society are invariably enormous and far exceed the private cost to the individual financial institution (Brunnermeirer, Crocket, Goodhart, Persaud, &Shin, 2009). Increasingly, therefore, the public plays an oversight function in monitoring and surveillance to ensure the systematic risk is not incurred excessively by the public. The main tool which regulators use to do so is capital adequacy requirements. In banking sector for example regulations need not be there to prevent bank failure but must be observed as a measure of sufficient prudential standards to prevent bank crises (Greenspan, 1997).

Over the years another regulatory framework developed and took the form of institutional regulation. The framework segmented institutions within a given country with insurance companies, banks, mortgage companies and security houses being the concern of different

regulatory bodies. This however became less practical since barriers between operating in different functional and geographical financial markets were eroded. Regulations should assist in setting standards that when followed will enable financial institution soundness and thus provide growth and sustainability leading to economic development. Regulations therefore has two important dimensions first, they are a cost. Just like taxation someone will bear the cost of regulation. The public must always ask whether the benefit out way the cost. Secondly, regulations have time line and must change with time. Old regulation may deter market growth and as market change so must regulations (Ngaira, 2009).

2.3 Empirical Literature Review

The empirical literature review attempted to review the information and theories available concerning this study. The researcher looked at published journals and research work that relates to the study.

2.3.1 Corporate governance in SACCO's

Sebhatu (2011) came out with a range of perspectives on the factors affecting the outreach and sustainability of SACCOs. These included lack of awareness and poor saving culture, weak organizational arrangement and governance, policy and regulatory environment, weak institutional capacity, low capital base, lack of differentiated products, inappropriate loan security requirements, and threats from other financial institutions (MFIs).

Chiumya (2006) conducted a study on assessing the potential impact of regulation and supervision on the Microfinance sector in Zambia, concluded that introduction of microfinance legislation must be accompanied by the effective implementation of regulatory and supervisory

policies for it to have any impact implying therefore, that capacity building has an important role to play in ensuring the effective enforcement, sanctions, and monitoring of regulation.

Muganga (2009) explored the relationship between regulation and supervision of microfinance institutions he concluded that regulation has acted as a catalyst to enhance growth and development of the entire credit industry and thus, has accomplished its goal of promoting the progress of the sector within a financial system approach and increasing financial inclusion and reaching the unbanked in South Africa. However, he observed that regulation is necessary but not sufficient, and therefore development of the regulatory framework should be accompanied by complementary development of other business laws and regulations.

Mugenyi (2010) carried out a study on corporate governance and strategy in Sacco's in Uganda and found that most SACCOs adhere to guidelines mostly set by apex bodies like Uganda Cooperative Alliance (UCA) and Uganda Credit and Savings Cooperative Union (UCSCU). However, the ability of the board to interpret and operationalize these guidelines as well as debate and pass by-laws for more efficient operations is limited. He also found that there is need for boards to perform their strategic role to transform the SACCOs into profit making financial service providers and reduce risk exposure that deter the growth of the microfinance sector**.**

Waweru (2011) did an investigation into cash balance management approaches in SACCOS in Nakuru. The research findings indicated that though a majority of SACCOS were conscious about the need to manage their cash balances very few had policies on cash balance management, and very few SACCOs had set optimum cash balance levels. Furthermore cash balance management approaches used by employee based and non-employee based SACCOs do

not differ despite the nature of uncertainty of receipts of cash in the two categories of SACCO. Use of institutional capital as a mode of financing Sacco's activities would ensure their sustainability in the competitive co-operative sector. That Growth of SACCOs wealth significantly depends on financial stewardship, Capital structure, and Funds allocation strategy. This is according to Olando et al (2012) in their study on financial practice as a determinant of growth of Sacco societies 'wealth.

Dadson (2012) carried out a study on concentrated share ownership and financial performance of listed companies in Ghana. He used data on listed firms at the Ghana Stock Exchange for a period of ten years between 1999 and 2008. The study used panel data regression analysis and performance was measured using Tobin's Q and ROA.A substantial statistical relationship was found. The findings presented that the share ownership on the Ghana Stock Exchange is heavily controlled by citizens and that ownership concentration, institutional and insider ownership precipitate higher firm financial performance. The recommendations were that it is essential to inspire concentrated ownership.

2.3.2 Capital adequacy requirements

Kioko (2012) in his study on the impact of SASRA regulations on the financial performance of Sacco's in Kenya concluded that higher capital requirements, and increase in management efficiency impacted positively to SACCO's profitability in the post- capital regulation period. The study revealed that capital regulation affects financial performance in SACCOs. The study also found that financial stability could be at risk as a result of shocks impinging on the economic system and absence of proper policy adjustments to mitigate the effects of these shocks.

Kavulya (2011) carried a study on the effects of corporate governance on savings and credit co-operatives financial performance in Kenya. The study found that the performance of the SACCO was affected by board composition since the board was actively involved in shaping SACCO strategy, the number of non-executive directors affected the financial performance of the SACCO since directors were involved in making the internal corporate governance mechanisms, Reducing ownership concentration, employee involvement, SACCO and Sacco leadership affected the financial performance of the SACCO. The study also found that financial monitoring by the board affected the performance of the SACCO. Quang and Xin (2014) used a set sample of non-financial firms listed on HoSE (Vietnam) in the period 2009-2012 to study and examine the influence of ownership structure and capital structure on firms' performance through multiple regression analysis method. They established that capital structure is significantly and inversely correlated to firms' financial performance (ROA and ROE).

Maina and Ondongo (2013) carried out a study on the effect of capital structure on financial performance of firms listed at the NSE from year 2002 to 2011. They used financial statements obtained as secondary data to analyse their findings using Causal research design and Gretl statistical software to perform panel regression analysis. The outcomes indicated that debt and equity are the key causes of financial performance of firms listed at the NSE. The results of this study revealed an adverse but very significant relationship between capital structure and firm performance. They concluded that the more the firm builds its capital structure from debt, the higher the possibility that such a firm will perform poorly.

Onaolopo, Obajan and Soyebo (2012) studied qualitative analysis of the impact of capital adequacy on managerial effectiveness in a case study of selected insurance firms in Nigeria.

They concluded that capital is a tool with enough potential to increase productivity effectiveness and efficiency of the entire firm; it improves communication and helps management to realize the firm's overall objectives. They further noted that capital is a vehicle that transforms the way insurance firms deliver services. To attract the potential opportunities offered by adequate capital in insurance industry they concluded that operators must realize the size of capital required as a basis of creating supportive and enabling support system which will nurture management culture performance and practice.

Odanga, Nyangweso and Nkobe (2013) studied liquidity, capital adequacy and operating efficiency of commercial banks in Kenya. They concluded that banks that are rich in capital resources are more stable operationally and are able to mitigate themselves from financial shocks in capital market. They further recommended that banks need to improve their liquid assets to deposits ratio and total capital ratio in an effort to improve operating efficiency to remain competitive in the market.

2.3.3 Liquidity requirement

A study carried out by Dong and Su (2010) established that a firm's profitability and liquidity are affected by working capital management. The study relied on data for the period ranging between 2006 and 2008 to evaluate the firms listed in the Vietnam Stock Exchange. They concluded that the relationship among the variables were strongly negative, implying that profit is adversely affected by an increase in cash conversion cycle. They further concluded that profitability rises as the debtor's collection period and inventory period reduce.

Ogundipe, Idowu and Ogundipe (2012) carried out a study to evaluate the impact of working capital on the performance and market value of firms. The study employed Tobin Q,

ROI, EBIT and ROA as the dependent variables while cash conversion cycle, current asset to total asset ratio , debt to asset ratio, current liability to total asset ratio were the independent variables. Using correlation and multiple regression analysis techniques, their study concluded that a significant adverse relationship occurs between cash conversion cycle and market valuation and a firm's performance.

Sanghai (2013) studied the effect of liquidity on the financial performance of non-financial companies listed at the Nairobi stock exchange. His study concluded that current ratio has a positive relationship on the firm' performance on the non- financial companies listed at the Nairobi stock exchange, he thus concluded that liquidity positively influence the financial performance of non- financial companies listed at Nairobi stock exchange. His study further showed that a rise in operating cash flow ratio had a positive effect on the financial performance of non- financial companies listed at Nairobi stock exchange, thus his study concluded that operating cash flow ratio positively affect the financial performance of non –financial companies listed at the Nairobi stock exchange. An increase in debt to equity positively influences the financial performance of non-financial companies listed at the Nairobi stock exchange, hence he concluded that debt to equity ratio positively affects the financial performance of non –financial firms listed in Nairobi stock exchange.

Zygmunt (2013) studied liquidity impact on profitability of polish information technology companies. He concluded that there exists statistically significance relationship between liquidity and profitability. In their study Tianwei and Paul (2006) examined the effect of liquidity on financial performance in agricultural firms, on the effect of liquidity on financial performance in agricultural firms, the study used descriptive research method where 50 firms

were analysed. The investors in these 50 firms were interested in mitigating their risk management. On the other hand, the management of these firms were concerned with understanding the financial consequences to alternative strategic decision. The policy makers assessed the levels of alternative policies for future performance of their firms. They analysed data using a Z-score model, this model was useful to farm accounting data for the detection of farm operating and financial difficulties. They concluded that credit risk management significantly influenced financial performance of agricultural companies.

Njeri (2013) Studied effects of liquidity on financial performance of deposit taking microfinances institutions in Kenya. She noted that the financial performance of the micro finance institutions in Kenya extremely relies on the level of the institutions' liquidity. She further concluded that there is a positive relationship between liquidity and performances of micro finance institutions. Her study recommended strategies to inspire micro finance institutions to improve on financial performance since this would result to efficiency in the industry. The study further established there is a positive relationship between the asset growth of the micro finance institutions and their financial performance. She noted that accessing more loans from banks would increase the financial performance and growth. Therefore, she found out that there is a significant influence of asset growth in this industry and their financial performance. The study also concluded that operational efficiency in this industry positively and significantly influenced the profitability since firms are able to make voluminous transactions within a short period of time. This has a significant impact on customers who feel motivated to bank with the firm. At the long run the increase volume of transactions enhances financial

growth and performance of these institutions. Thus, there is a statistically positive significant relationship between operational efficiency and the financial performance of MFIs.

2.3.4 Asset quality

The size of loan to members relative to total asset was positive and highly significant predictor of performance, confirming the a priori premise that loan is the most productive asset of any financial institution. The proportion of equity capital relative to asset is positive and significant, indicating that capital structure is important. High growth in assets and loan to members is related to high financial performance. (Njoroge, 2008).

In his study Chisti (2012) examined the impact of asset quality on profitability of private banks in India. He used ROA and Profitability ratios to examine the relationship between asset and profitability. The study used multiple regression models to examine banks quality and operating performance. His results showed that unfavourable asset ratio is negatively associated with banking operating performance. The higher the quality of the loan processing before such loans are approved the lower the non- value- added activities required to process difficult loans, and thus the higher the banking operating performance. He further concluded that bank's asset quality will be worse and it will take more resources for a bank to conduct non-value added credits receiving activities which will contribute to poor performance.

Mihail (2009) performed a study on how asset liability management affects the profitability of banks. His objective was to analyse asset and liability management in in banks for a period 2004 to 2011. She used a panel of over 30 banking institutions spread all over Europe. He employed canonical correlation where she tested for linear dependency between the structure of assets and liabilities. This study concluded that in order to be effective in banks, the

management of assets and liabilities must take into consideration the risk level, earnings, liquidity, profit, solvency, the level of loans and deposits.

Anjili (2014) carried out a study on effects of asset and liability management on the financial performance of commercial banks in Kenya. He used CAMEL framework to determine the effects of asset liability management on the financial performance of commercial banks in Kenya. He analysed data obtained from 43 banks between years 2004 to 2013 using multiple regression method. His study concluded that assets liability management is the most significant factor that influences performance of commercial banks. He further concluded that a slight decrease in efficiency can lead to very high reduction in profits.

2.4 Research Gaps

After critically reviewing the literature, we identified the gaps that still exist on the study of effects of SASRA regulation on Sacco's financial performance in Kenya. The past studies did not address the implication of government regulations on liquidity, capital adequacy and asset quality to the Sacco members. Even after the enactment of Sacco regulatory body (SASRA) in 2008, some Sacco's are still experiencing financial management problems and poor governance. This has not only put financial pressure but raised serious questions on financial performance of the sector.

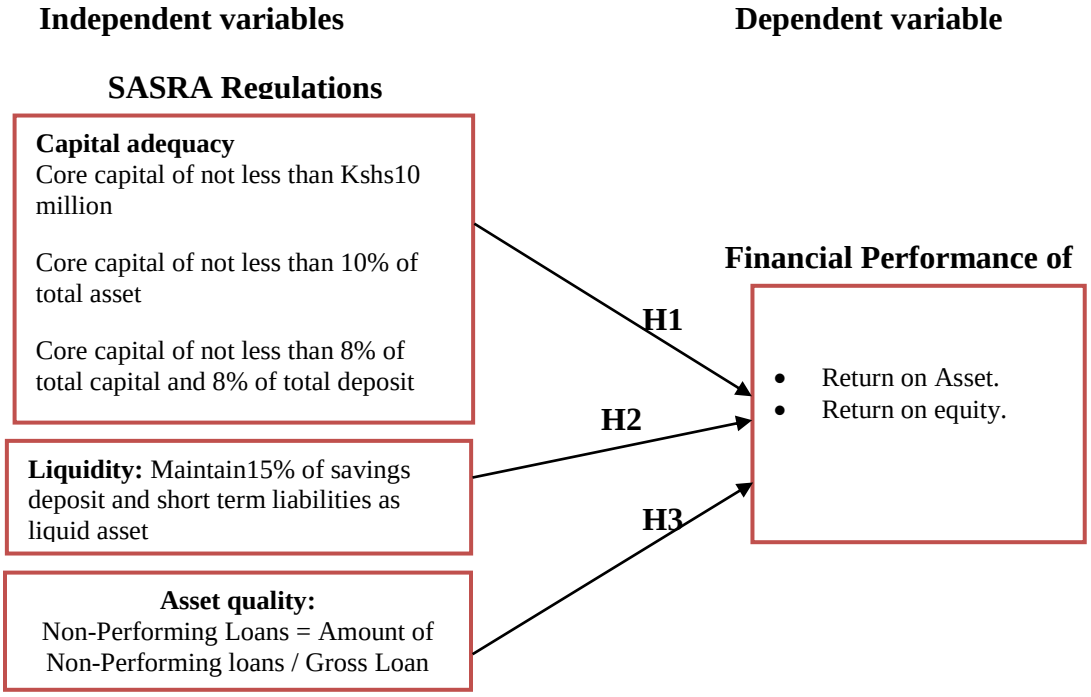
2.5 Conceptual Framework

The conceptual framework highlights the relationship between dependent and independent variable in the study of effect of government regulation on SACCO financial performance. Financial performance is the dependent variable. The researcher adopted liquidity ratios, capital adequacy and asset quality as independent variables. These variables formed the basis for

framework around which the study was organized and presented, the variable defined and presented in view of answering the effect of government regulation on Sacco's financial performance in Kenya. The study investigated whether there are changes in the profitability of the SACCO's before and after the enactment of Sacco society's regulation (SASRA).The research investigated whether there is change in ROE and ROA**.** The relationship between dependent and independent variables is shown in figure one below.

FIGURE 1

Conceptual Framework



2.6 Research Hypotheses

The researcher used a regression model since the problem of interest is the nature of the relationship itself between the dependent variable and the independent variables. In order to

achieve the above objectives, the research tested the regression equation using following hypotheses.

H1: There is no significant relationship between capital adequacy and financial performance of deposit taking Sacco's in Nairobi.

H2: There is no significance relationship between liquidity management and financial performance of deposit taking Sacco's in Nairobi

H3: There is no significance relationship between asset quality and financial performance of deposit taking Sacco's in Nairobi

2.7 Operationalization of Variables

Table 1 below demonstrates the variables used in the model, their notation symbols, definition and how they are measured.

TABLE 1
Definition and Measurement of Variables

Variables	Notation	Operational definition	Measurement
Return on asset	ROA	The ratio measures the ability of the management to realize revenue through utilization of the company assets at their disposal. In other words, it demonstrations how efficiently the firm's resources are utilized to generate income. It therefore indicates the efficiency levels of the managers of a firm in generating net income from all the resources of the company (Khrawish, 2011).	Total Income to its total Asset.
Return on equity	ROE	ROE as a financial ratio refers to how much profit a firm earned compared to the total amount of shareholder equity invested. This is what the investors look in return for their investment. The higher the ROE the more profitable the firm is.	Net Income after taxes divided by total Equity Capital.
Capital adequacy	CA	Capital adequacy ratio demonstrates the internal strength of a firm to withstand losses during crisis. It has a direct effect on the effectiveness of banks by influencing its expansion to risky but profitable undertakings (Sangmi & Nazir, 2010).	Total Capital to total Assets.
Liquidity	L	Liquidity is the ability of a firm to achieve its obligations to its depositors. According to Dang (2011) adequate level of liquidity is highly correlated to firm's profitability	Total Loans to total customer Deposits.
Asset quality	AQ	The profitability of a financial institution is governed by the quality of loan portfolio. The quality of a loan portfolio has a direct effect on a firm's profitability. A Low nonperforming loan to total loans is an indication of a good portfolio. The lower the ratio the better the firm in its financial performance (Sangmi & Nazir, 2010).	Non-performing Loans to total Loans.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will deal with Research Design. It further discloses the population of all licensed SACCOs in Kenya. In addition the chapter deals with the sampling method used in the research to achieve the highest degree of representation, methods of data collection, procedures to be adopted and the data analysis approach to be taken.

3.2 Research Design

Descriptive design was used since it provides insights into the research problem by describing the variables of interest. According to Mugenda and Mugenda (2003) descriptive research is the process of collecting data in order to answer questions concerning the current status of the subject in the study. The purpose of the descriptive approach is the description of the state of affairs as it exists at the present. The researcher can only report what has happened or what is happening (Kothari, 2004).

3.3 Target Population

Target population is that population to which the researcher wants to generalize the results of study (Mugenda & Mugenda, 2003). The target population of this study consisted of all the 41 deposit taking SACCOS in Nairobi which had complied with SASRA regulation by January 2015. However, all the 41 firms were examined against various factors such as availability of data and integrity of data, which is unqualified audit report. The entire 41 deposit taking Sacco's were involved in this study thus a census was carried out. A census is an attempt to collect data from every member of the population being studied rather than choosing a sample (Harding,

2006). Census as a method to collect data from all the 41 SACCO's is further considered because the target population is small, can be easily identified is more representative and it fulfils the requirements of efficiency and reliability.

3.4 Data Collection Instruments and Procedures

The main data for this study was secondary data. Audited financial records were collected from all the chief finance officers of the 41 SACCO's. The researcher sought to obtain six years financial statements three years before and three years after SASRA regulations. Specially designed data collection template was used to collect relevant data from audited financial report.

3.5 Data Analysis and Presentation

The data was analysed using panel data also known as cross sectional time-series data. This is a dataset in which the behaviour of units is observed across time (Reyna, 2007). Panel data allows one to observe a repeated measurement of the same variables on the same unit, investigating how an event changes the outcome (Bruderl, 2015). Panel data was chosen for this research because of a number of reasons: First, panel data analysis utilizes both time series and cross sectional data and hence it is expected to give unbiased estimators. Second, this form of analysis is suitable for studying data which vary over time and cross sectional, such as the kind envisaged in the study. Thirdly, panel data set includes more data information, more degrees of freedom, reduced collinearity among variables, and therefore providing a more efficient estimation than pure cross sectional or time series estimations. Finally, the panel data methodology gives researchers greater flexibility in controlling for the effects of individual-specific variables and time-specific variables (Baltagi, 2013).

To determine the effect of SASRA regulation on financial performance of Sacco's in Nairobi a regression model was applied. The researcher used the regression model since the problem of interest is the nature of the relationship itself between the dependent variable and the independent variables. Data was analysed using STATA and presented using frequency tables and figures.

A statistical hypothesis test (Hausman specification test) was used to evaluate which model between fixed or random effects models corresponds to the data. The General specifications for the fixed effects model and the random effects model is as per equations (i) and (ii) below respectively:

$Y_{it} = \alpha_i + X_{it}\beta_1 + u_{it}$ .....(i)

$Y_{it} = \alpha + X_{it}\beta_1 + a_i + u_{it}$ .....(ii)

Where:

Y_{it} = the dependent variable denoting performance of company i at time t

i denotes the observation (company), i = 1, ...,41

t is the time period t = 2009-2014

X_{it} denotes a vector of independent variables β are coefficients to be estimated

a is a constant term

The general empirical model to be used in Random effect model can be written as:

$Y_{it} = \alpha + X_{it}\beta + v_{it}$: $v_{it} = a_i + u_{it}$.....(iii)

Where:

v_{it} is a composite error term with two components: a_i and u_{it}

a_i denotes heterogeneity effects

u_{it} denotes idiosyncratic disturbances.

The fixed effects models for this study therefore are:

$$ROA_{it} = \beta_0 + X_{1it}\beta_1 + X_{2it}\beta_2 + X_{3it}\beta_3 + u_{it} \quad \text{.....(iv)}$$

$$ROE_{it} = \pi_0 + X_{1it}\,\pi_1 + X_{2it}\,\pi_2 + X_{3it}\,\pi_3 + u_{it} \quad \text{.....(v)}$$

While the random effects models are:

$$ROA_{it} = \beta_0 + X_{1it}\beta_1 + X_{2it}\beta_2 + X_{3it}\beta_3 + v_{it} \quad \text{.....(vi)}$$

$$ROE_{it} = \pi_0 + X_{1it}\,\pi_1 + X_{2it}\,\pi_2 + X_{3it}\,\pi_3 + v_{it} \quad \text{.....(vii)}$$

Where:

ROA_{it} = Return on assets of firm i at time t

ROE_{it}=Return on equity of firm i at time t

X_{1it} = Capital Adequacy (Core capital/ total assets) of firm i at time t.

X_{2it} = Liquidity Ratio (Total Loans / Total customer deposits) of firm i at time t.

X_{3it} = Asset Quality (Non-Performing Loans/Total loans) of firm i at time t.

α= Constant term

β= coefficients of the explanatory variables

v_{it}= composite error term

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter discusses the actual analysis which was carried out in this research. Analysis started with a presentation of the data's descriptive statistics. Next, key pre-estimation diagnostic tests were carried out on the data to evaluate its appropriateness for the envisaged analysis. Satisfied with the adequacy of the data for panel data analysis, the author conducted a Hausman Specification test to provide guidance on whether to use the fixed effects model or the random effects model. The random effects model emerged as the most suitable model and as such, it was chosen for regression analysis. Finally, post estimation diagnostic tests were carried out to investigate some issues which only become apparent after analysis.

4.2 Descriptive Data Analysis

The researcher explored the study data descriptively to yield to output in table two below. It can be seen that the mean capital adequacy for the sampled SACCOs was 14.6%. This implies that on average, SACCOs exceeded the SASRA requirement that core capital should be at least 10% of total assets. The SACCO with the best adequacy was at 1.94 while the least adequacy was 0.001012. The data also shows that the least liquid SACCO had a loan to deposits ratio of 1.765431 while that most liquid SACCO had a loans to deposit ratio of 20%. The mean value for liquidity was 1.018. SASRA regulations hold that SACCOs should maintain at least 15% of customer deposits as liquid assets and loans lent out should be at most 85% of customer deposits. This observation reveals a blatant violation of this regulation by SACCOs.

Asset quality was measured by the ratio of nonperforming loans to total loans. Table 2 below shows an average value of 11.6355% for this variable. It is also plainly evident that the SACCO with the highest burden of poor quality assets had 50.541% of the value of all its loans being classified as nonperforming. Conversely, the best performing SACCO had an asset quality of 0.00127%. The overall average for this variable was 11.6355%. The sample SACCOS had a mean return on assets of 11.6355% and a mean return on equity of 17.6395%. The highest return on assets was 20.212%; and this implies a net profit of 20.212 shillings for every 100 shillings of gross income. The highest ROE was 1.88145. This implies an exceptionally high level of leverage for the pertinent SACCO.

TABLE 2
Descriptive Statistics

stats	adequacy	liquidity	quality	roa	roe
mean	0.145891	1.018773	0.039688	0.116355	0.176395
max	1.945873	1.765431	0.50541	0.20212	1.881457
min	0.001012	0.203211	0.000127	0.00123	0.000838
sd	0.221252	0.215734	0.072866	0.03125	0.241533

4.3 Diagnostic Tests

Several pre-estimation diagnostic tests were carried out to explore various characteristics of the study data in order to evaluate whether it was appropriate for panel regression. These tests and their results are discussed below.

4.3.1 Multicollinearity

Multicollinearity is evident in data when two or more independent variables are highly correlated in such a manner that one variable can be estimated from another one with a high degree of accuracy. High degrees of multicollinearity inflate the R^2 such that the overall regression looks good in as much as individual regressors could be insignificant. Multicollinearity also makes a research to lose robustness. In highly collinear data, small changes in specification can cause big changes in regression coefficients and/or their significance. Multicollinearity is usually evaluated using the Variance Inflation Factor (VIF). A rule of thumb is that the VIF should never exceed 10. Using the *collin* STATA add on, we computed the Variance Inflation Factors for the research data as shown in table three below.

TABLE 3
Variance Inflation Factors

Variable	VIF	SQRT VIF	Tolerance	R-Squared
adequacy	1.03	1.01	0.9720	0.0280
liquidity	1.05	1.02	0.9545	0.0455
quality	1.07	1.04	0.9328	0.0672
roa	1.02	1.01	0.9769	0.0231
roe	1.04	1.02	0.9643	0.0357
Mean VIF	1.04			

It can be noted that all the Variance Inflation Factors are significantly small, implying that the research data didn't have multicollinearity.

4.3.2 Normality

Data is deemed to exhibit normality if it follows the normal distribution. In as much as it's not necessary for data to have a normal distribution for it to be analyzed using regression analysis, the residuals of the regression analysis should exhibit normality. Nevertheless, we carried out the

Shapiro-Wilk Test of Normality on the raw data. The results of this test are illustrated in table four:

TABLE 4
Shapiro-Wilk Test of Normality

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
adequacy	246	0.52039	85.758	10.349	0.00000
liquidity	246	0.93479	11.660	5.710	0.00000
quality	246	0.54347	81.632	10.234	0.00000
roa	246	0.93700	11.265	5.630	0.00000
roe	246	0.51398	86.904	10.380	0.00000

If the p value for the Shapiro-Wilk test of Normality is less than 0.05, the null hypothesis that the data under consideration is normally distributed is rejected. As such, we can deduce that all the data was not normally distributed. Nevertheless, we can still use regression analysis as normality of the input data is not an assumption of regression analysis.

4.3.3 Serial correlation

Serial correlation is a phenomenon which occurs when the error terms of regression variables for successive periods are correlated. When present in a dataset, it can distort the efficiency of regression estimators. Using the *xtserial* STATA addon, we tested this study's data for serial correlation. The results for this test are shown in figure two below.

FIGURE 2
Serial Correlation Test

```
. xtserial roe roa adequacy liquidity quality

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,      40) =     21.674
           Prob > F =      0.0000

. xtserial roa adequacy liquidity quality

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,      40) =     12.624
           Prob > F =      0.0010
```

The test statistic for both equations was less than 0.05, implying serial correlation in both cases. However, inasmuch as this test implies serial correlation in the dataset, Reyna (2007) posits that serial correlation poses major problems in macro panels (i.e. panels with 20+ time periods).

4.3.4 Hausman specification test

In order to be able to decide on the panel regression model to use, we ran both equation (i) and equation (ii) through the Hausman specification test. These two equations yielded p – values > 0.05, suggesting that the random effects model was appropriate in both cases. The results for the Hausman specification test are outlined in tables five and six below:

TABLE 5
Hausman Specification Test for Equation One

```
hausman fixed random
```

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
adequacy	.0089053	.0059772	.0029282	.0051208
liquidity	.0192199	.0151706	.0040493	.0041597
quality	.0085159	-.0098658	.0183817	.0135825

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 2.34
Prob>chi2 = 0.5045

TABLE 6
Hausman Specification Test for Equation Two

```
hausman fixed random
```

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
adequacy	-.3461392	-.2454367	-.1007025	.0704285
liquidity	-.0760643	-.0116101	-.0644542	.0587658
quality	-.6593665	-.4542824	-.2050842	.1902276

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 3.53
Prob>chi2 = 0.3166

4.4 Regression Results

Having settled on the random effects model, we estimated both equation one and equation two using this panel specification. The results of the estimation are outlined in tables seven and eight below.

TABLE 7
Estimation Results for Equation One

```
Random-effects GLS regression                   Number of obs      =       246
Group variable: saccoid                         Number of groups   =        41

R-sq:  within  = 0.0169                         Obs per group: min =         6
       between = 0.0028                                        avg =       6.0
       overall = 0.0063                                        max =         6

                                                Wald chi2(3)       =      3.40
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.3342
```

roa	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
adequacy	.0059772	.0098467	0.61	0.544	-.013322	.0252764
liquidity	.0151706	.0094284	1.61	0.108	-.0033086	.0336499
quality	-.0098658	.0289149	-0.34	0.733	-.066538	.0468064
_cons	.1004193	.0109662	9.16	0.000	.078926	.1219125
sigma_u	.02448879					
sigma_e	.02015483					
rho	.59617268	(fraction of variance due to u_i)				

From the results of the regression analysis, equation one can be expressed as:

ROA = 0.1004193 + 0.0059772*Adequacy + 0.0151706*Liquidity-0.0098658*Quality.....(viii)

TABLE 8
Estimation Results for Equation Two

```
Random-effects GLS regression                   Number of obs      =       246
Group variable: saccoid                         Number of groups   =        41

R-sq:  within  = 0.0665                         Obs per group: min =         6
       between = 0.0200                                        avg =       6.0
       overall = 0.0339                                        max =         6

                                                Wald chi2(3)       =     12.37
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0062
```

roe	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
adequacy	-.2454367	.0842285	-2.91	0.004	-.4105215	-.0803518
liquidity	-.0116101	.083302	-0.14	0.889	-.1748791	.1516588
quality	-.4542824	.2523619	-1.80	0.072	-.9489026	.0403378
_cons	.2420596	.0928779	2.61	0.009	.0600223	.424097
sigma_u	.13480391					
sigma_e	.19938157					
rho	.31371706	(fraction of variance due to u_i)				

Equation two can be expressed as:

ROE = 0.2420596-0.2454367*Adequacy-0.0116101*Liquidity-0.4542824 *Quality.....(ix)

4.5 Post Estimation Analysis

Post estimation tests retrieve information from the most recent test for further tests and analysis. In this section, we carried out the Breusch Pagan Lagrangian Multiplier (LM) test for heteroscedasticity.

4.5.1 Testing for heteroscedasticity

The null hypothesis in the Breusch Pagan LM test is that variance across entities is zero. If we reject the null, we should conclude that the random effects model is appropriate. The null is rejected if the p value<0.005. The results of this test for equation one shown in the figure three below.

FIGURE 3

Breusch Pagan LM test for Equation One

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        roa[saccoid,t] = Xb + u[saccoid] + e[saccoid,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                     roa |    .0009766         .03125
                       e |    .0004062        .0201548
                       u |    .0005997        .0244888

        Test:   Var(u) = 0
                                chibar2(01) =    197.09
                            Prob > chibar2 =    0.0000
```

Since the p value < 0.05, we reject the null in figure two and conclude that the data is heteroscedastic and hence the random effects model should be used.

Similarly, equation two yielded a p value which was less than 0.05. This is illustrated in figure three below.

FIGURE 3

Breusch Pagan LM test for Equation Two

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        roe[saccoid,t] = Xb + u[saccoid] + e[saccoid,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                     roe |   .0583384        .2415334
                       e |    .039753        .1993816
                       u |   .0181721        .1348039

        Test:   Var(u) = 0
                                chibar2(01) =     50.09
                            Prob > chibar2 =    0.0000
```

Since the p value < 0.05 in this case too, we reject the null hypothesis of homoscedasticity and conclude that the data is heteroscedastic and hence the random effects model should be used for equation two as well.

4.5.2 Hypothesis testing

The hypotheses of this study were framed in the null as follows:

> *H1: There is no significant relationship between capital adequacy and financial performance of deposit taking Sacco's in Nairobi.*
>
> *H2: There is no significance relationship between liquidity management and financial performance of deposit taking Sacco's in Nairobi.*
>
> *H3: There is no significance relationship between asset quality and financial performance of deposit taking Sacco's in Nairobi.*

Going by the values and levels of significance of the regression coefficient, we therefore reject the null hypothesis in all three cases and conclude that capital adequacy, liquidity management and asset quality have an effect on financial performance of deposit taking SACCO's.

4.6 Discussion of Findings

Outlined below is a discussion of major findings of the foregoing data analysis.

4.6.1 Discussion of findings for equation one

Equation one estimated the effects of capital adequacy, liquidity, and asset quality on Saccos' return on assets. The overall regression was not significant since the p – value was greater than 5%. This could possibly be attributed to the small number of the time-series observations in the panel data. The power of a regression analysis increases with increment in the number of observations.

The results imply that an increase of one unit in capital adequacy should lead to a 0.59% increment in the return on assets. (p value = 0.544). If liquidity increases by one unit, the return

on assets should increase by 1.51% (p value = 0.108). Further, a unit decrease in the asset quality ratio should lead to an increase of 0.98% (p value = 0.733) in the return on assets. This result is expected since non-performing loans pose a huge credit risk to the SACCOs and their provisions negate income.

4.6.2 Discussion of findings for equation two

In equation two, we estimated the effects of capital adequacy, liquidity, and asset quality on SACCOs' return on equity. The overall regression for equation two was significant (p value = 0.0062). Further, all regressors were significant, except asset quality. According to the results, a unit decrease in capital adequacy would increase the return on equity by 24.5%. Essentially, a reduction in capital requirements would make more available for lending increasing the SACCO's profitability. Further, a unit decrease in liquidity should translate to 1.16% increment in return on equity. This can be viewed from the fact that should a SACCO offload much of its mediocre loan book and decide to focus on high yielding loans, it can have a higher return with much more lent out in loans. Just like in equation one, a unit decrease in asset quality would increase return on equity by 45.42%. This would result if a SACCO decides to take decisive action in discarding its nonperforming loans or somewhat making the defaulting customers to pay.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the major findings; it also provides the conclusions, the recommendations made and the suggested areas for further research.

5.2 Summary of Major Findings

The research estimated the effects of capital adequacy, liquidity, and asset quality on Sacco's return on assets. A regression carried out was not significant since the p – value was greater than 5%. This could possibly be attributed to the small number of the time-series observations in the panel data. The power of a regression analysis increases with increment in the number of observations.

The results implied that an increase of one unit in capital adequacy should lead to a 0.59% increment in the return on assets. (P value = 0.544). If liquidity increases by one unit, the return on assets should increase by 1.51% (p value = 0.108). Further, a unit decrease in the asset quality ratio should lead to an increase of 0.98% (p value = 0.733) in the return on assets. This result is expected since non-performing loans pose a huge credit risk to the SACCOs and their provisions negate income.

The study further estimated the effects of capital adequacy, liquidity, and asset quality on SACCOs' return on equity. The overall regression for equation two was significant (p value = 0.0062). Further, all regressors were significant, except asset quality. According to the results, a unit decrease in capital adequacy would increase the return on equity by 24.5%. Essentially, a reduction in capital requirements would make more available for lending increasing the

SACCO's profitability. Further, a unit decrease in liquidity should translate to 1.16% increment in return on equity. This can be viewed from the fact that should a SACCO offload much of its mediocre loan book and decide to focus on high yielding loans, it can have a higher return with much more lent out in loans. Just like in equation one, a unit decrease in asset quality would increase return on equity by 45.42%. This would result if a SACCO decides to take decisive action in discarding its nonperforming loans or somewhat making the defaulting customers to pay.

5.3 Conclusions

The study concludes that capital adequacy; liquidity and asset quality ratios are substantial predictors of return on asset and return on equity and by extension the profitability levels of the regulated and licensed deposit taking SACCOS. These findings indicate that liquidity ratios were most important in determining return on assets of deposit taking SACCOS. However, all the three ratios expressed a relatively high significance while determining the return on equity with asset quality revealing a very high influence on investors return.

5.3.1 Effect of capital adequacy on return on assets

The study results revealed that an increase of one unit in capital adequacy should lead to a 0.59% increment in the return on assets. (p value = 0.544). This will positively impact on the overall financial performance of the individual SACCO. This findings concur with a study carried out by Kioko (2012) that higher capital requirements and increase in management efficiency impacted positively to SACCO's profitability in the post- capital regulation period. However, the results contradicted Maina and Ondongo (2013) who concluded that the more the firm builds its capital structure from debt, the higher the possibility that such a firm will perform poorly.

5.3.2 Effect of liquidity on return on assets

The study found out that if liquidity increases by one unit, the return on assets should increase by 1.51% (p value = 0.108). On the ground of research results it is evident that liquidity is statistically significant on SACCO performance. Liquidity levels thus are vital for any firm including Sacco's existence. Predominantly, liquidity has an effect on financial costs reduction or development, as well as it impacts on SACCO risk level. However, the decisive significance of liquidity means that it is important for SACCO development and in particular its main focus which is to provide loans to members. The results coincide with Sanghai (2013) on effect of liquidity on the performance of companies listed in Nairobi Stock Exchange and who concluded that liquidity positively influence financial performance of firms. The results further concurred with findings by Zygmunt (2013) on how liquidity had a statistically significant relationship with Polish information technology companies.

5.3.3 Effect of asset quality on return on assets

The study further noted that a unit decrease in the asset quality ratio should lead to an increase of 0.98% (p value = 0.733) in the return on assets. This result is expected since non-performing loans pose a huge credit risk to the SACCOs and their provisions negate income. This is in line with findings by Anjili (2014) who concluded that assets liability management is the most significant factor that influences performance of commercial banks hence, a slight decrease in efficiency can lead to very high reduction in profits.

5.3.4 Effect of capital adequacy on return on equity

The study results indicated that the effects of capital adequacy, liquidity, and asset quality on SACCOs' return on equity was significant (p value = 0.0062). According to the results, a unit decrease in capital adequacy would increase the return on equity by 24.5%. Essentially, a

reduction in capital requirements would make more funds available for lending increasing the SACCO's profitability. The research findings corresponds with a study carried out by Quang and Xin (2014) who established that effect of capital structure on ROE had a significant impact on firm financial performance.

5.3.5 Effect of liquidity on return on equity

The study also concluded that a unit decrease in liquidity should translate to 11.6% increment in return on equity. This can be viewed from the fact that should a SACCO offload much of its mediocre loan book and decide to focus on high yielding loans, it can have a higher return with much more lent out in loans. These results agreed with study carried out by Dong and Su (2010) on Vietnam stock exchange and who concluded that profitability increased as firms were efficiently managing their liquidity. This results were similar to what Njeri (2013) concluded while studying effects of liquidity on deposit taking microfinances in Kenya.

5.3.6 Effect of asset quality on return on equity

Just like the results with return on assets, a unit decrease in asset quality would increase return on equity by 45.42%. This would result if a SACCO decides to take decisive action in discarding its nonperforming loans or somewhat making the defaulting customers to pay. The study found out that the size of a loan to members relatively to asset was positive and highly significant predictor of performance. This is in line with Njoroge (2008) who concluded that the size of loan to members relative to total asset was positive and highly significant predictor of performance, confirming the a priori premise that loan is the most productive asset of any financial institution. High growth in assets and loan to members is related to high financial performance.

5.4 Recommendations

Based on the study findings discussed above three recommendations are provided based on the objectives of the study. First given that all the independent variables had a positive effect on return of assets and return on equity, the study therefore recommends that for deposit taking SACCOS in Kenya they need to focus on how their performance relates to returns to equity. This is due to the fact that capital adequacy was observed to have a significant effect on return on asset and return on equity.

Secondly, deposit taking SACCOS should observe their liquidity levels to ensure that they are liquid enough to perform their activities. Poor liquidity levels for SACCOS point to high riskiness and the inability of the SACCO to perform their short term obligations competently.

Further, though asset quality had a relatively low significance on return on asset as compared to return on equity, it is important for deposit taking SACCOS to observe efficiency and effectiveness in dealing with delinquencies since the greatest asset of a given SACCO is in terms of performing loans. A high non-performing loan affects the SACCOS operations and has a trickledown effect on the SACCOS financial performance.

Lastly, the study recommends for further study in the subject area of the SASRA regulations on the performance of deposit taking SACCOS. The current study considered two variable in each of the three categories of ratios and would recommends another study to establish how the other ratios that were not considered in the current study influence financial performance of licensed deposit taking cooperatives in Kenya.

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APPENDICES

APPENDIX 1

INTRODUCTORY LETTER

To Whom It May Concern

Dear Sir/Madam,

RE: Request to Collect Data on a Research Topic Entitled 'Effect of licensing requirement on the performance of deposit taking savings and credit cooperatives societies in Kenya: A case of selected Sacco's in Nairobi."

I am an MBA candidate at KCA University in the School of Business and planning. As part of the requirements for the award of the degree, I am expected to undertake a research study which involves data collection and report writing.

To achieve my objective, I hereby request for your participation in providing a copy of audited financial statements of your SACCO for the last 6 years. The research results will be used for academic purposes only.

No one will have access to these records except the University and the researcher. The information obtained will be treated confidentially and for research purposes only. Your support and cooperation in providing this information is highly appreciated.

Yours faithfully,

Richard N Thomi

APPENDIX II

LIST OF DEPOSIT TAKING SACCO IN NAIROBI

LARGE SACCOS

1. Mwalimu National Sacco
2. Harambee Sacco
3. Afya Sacco
4. Kenya Police Staff Sacco
5. Stima Sacco
6 United Nations Sacco
7.Ukulima Sacco
8. Kenya Bankers Sacco
9 Magereza Sacco
10.Nacico Sacco
11.Hazina Sacco
12. Sheria Sacco
13. Chuna Sacco
14. Waumini Sacco
15. Maisha Bora Sacco
16. Jamii Sacco
17. Chai Sacco
18. Asilisacco
19. Wanandege Sacco
20. Kenpipe Sacco
21. Nassefu Sacco

MEDIUM SACCO

1. KenversitySaccco
2. Safaricom Sacco
3. NAKU Sacco
4. Wanaanga Sacco
5 Ardhisacco
10. Mwito Sacco
11.COMOCO Sacco
12.fundilima saco
13.Nafakasacc
14. Telepost Sacco

6 Ufanisi Sacco

7 Ufundi Sacco

8 Ukristo Na Ufanisi Wa Anglicana Sacco Society Ltd

9 Elimu Sacco

15.Shirika Sacco

16.Nest Sacco

17.Nation Staff Sacco

SMALL SACCO

1. Kingdom Sacco

2. Airport Sacco (ACO)

3. Orthodox Development Sacco

SOURCE; SASRA, 2015